

CLAIMS

What is claimed is:

1. A method of assembling a high pressure sensor with knurl press-fit, the
5 method comprising the steps of:
providing a pressure port having a material with a first hardness and a housing
having a material with a second hardness less than the first hardness, the
pressure port having a mounting boss and the housing having a receptacle for
receiving the mounting boss;
10 configuring the mounting boss of the pressure port with knurls thereon, the knurls
oriented parallel to an axis of the pressure port; and
pressing the mounting boss of the pressure port into the receptacle of the housing
along a direction of the axis such that the knurls deform the receptacle of the
housing to conform about the knurls to define a semi-rigid mount.

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2. The method of claim 1, wherein the configuring step includes configuring a shoulder on the mounting boss, and wherein the pressing step include pressing the mounting boss into the receptacle of the housing up to the shoulder.

5 3. The method of claim 1, wherein the providing step includes providing a stainless steel pressure port and an aluminum housing.

4. The method of claim 1, wherein the providing step includes providing a length of the knurls that is less than a depth of the receptacle.

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5. The method of claim 1, wherein the configuring step includes configuring the knurls of the mounting boss and the receptacle to have an interference fit.

6. The method of claim 1, wherein the configuring step includes configuring the
15 mounting boss with straight knurls.

7. The method of claim 1, further comprising the step of applying a seal to the press fit area to seal the pressure port.

8. A method of assembling a high pressure sensor with straight knurl press-fit, the method comprising the steps of:

providing a pressure port having a material with a first hardness and a housing

having a material with a second hardness less than the first hardness, the

5 pressure port having a mounting boss and the housing having a receptacle for receiving the mounting boss;

configuring the mounting boss of the pressure port with straight knurls thereon,

the straight knurls oriented parallel to an axis of the pressure port, the

mounting boss also configured with a shoulder at a first end of the straight

10 knurls; and

pressing the mounting boss of the pressure port into the receptacle of the housing

along an axial direction of the pressure port up to the shoulder such that the

straight knurls deform the receptacle of the housing to conform about the

straight knurls to define a semi-rigid mount.

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9. The method of claim 8, wherein the configuring step includes configuring the straight knurls to have bevel on an end thereof.

10. The method of claim 8, wherein the providing step includes providing a
5 hardened stainless steel pressure port and an aluminum housing.

11. The method of claim 8, wherein the configuring step includes configuring the straight knurls of the mounting boss and the receptacle to have an interference fit, and wherein a length of the straight knurls is less than a depth of the receptacle.

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12. The method of claim 8, further comprising the step of applying a silicone glue to the press fit area to seal the pressure port.

13. A high pressure sensor with a knurl press-fit assembly apparatus comprising:
- a pressure port having a material with a first hardness, the pressure port having a mounting boss with knurls thereon, the knurls oriented parallel to an axis of the pressure port; and
- 5 a housing having a material with a second hardness less than the first hardness, the housing having a receptacle conforming about the knurls of the mounting boss and forms a semi-rigid mount.

14. The apparatus of claim 13, wherein the pressure port includes a shoulder on the mounting boss, and wherein the shoulder abuts the housing, and wherein the pressure port is made of stainless steel and the housing is made of aluminum.

5 15. The apparatus of claim 13, further comprising a seal applied between the pressure port and housing.

16. The apparatus of claim 13, wherein the pressure port has straight knurls thereon with a length less than a depth of the receptacle.

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